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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/649,144 08/25/00 KIM

M TRIN 210 EXAMINER

MMC2/0816

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ART UNIT 1000	PAPER NUMBER
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DATE MAILED:

08/16/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/649,144

Applicant(s)
Kim et al.

Examiner
Thanh Lam

Art Unit
2834



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

BURTON S. MULLINS
PRIMARY EXAMINER

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

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DETAILED ACTION

1. The information disclosure statement filed on 12/27/2000 fails to comply with 37 CFR 1.98(a)(1), which requires a list of all patents, publications, or other information submitted for consideration by the Office. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation "magnet holder being---compression molded fiber and epoxy" cited in claim 1, lines 9-11, it is not clear that the group consisting of "plastic, reinforced thermoplastic, fiber and epoxy " or "reinforced plastic, fiber and epoxy" clarification is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-8, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Zigler et al.

Zigler et al. disclose a circular permanent magnet array comprising a plurality of elongate magnets each having a longitudinal axis, the magnets arranged around a common central axis of rotation with the longitudinal axes located parallel to and radially offset from the axis of rotation; a nonmagnetic magnetic holder for maintaining the magnets in a fixed position, the magnet holder being made of a material selected from the group consisting of epoxy.

Regarding claim 2, the plurality of magnets includes a first set having a predetermined number of magnets equally spaced around the axis of rotation, and a second set having the same predetermined number of magnets, each of the magnets of the second set being axially aligned with a corresponding magnet in the first set.

Regarding claim 3, all of the magnets are rare earth magnets (well known).

Regarding claim 4, the magnet holder includes a retainer generally surrounding each of the magnets, and a separate liner located between the magnets and the inner surface of the rotor.

Regarding claim 5, the magnets each have two ends and an alignment feature provided on at least one the ends to locate the magnet in a predetermined orientation with respect to the holder.

Regarding claim 6, the alignment feature comprises a stepped portion.

Regarding claim 7, the alignment feature comprises a groove.

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Regarding claim 8, each of the magnets is symmetrical about its longitudinal axis.

Regarding claim 10, each of the magnets has a square cross-section.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zigler et al. in view of Bitterly et al.

Zigler et al. disclose every aspect of claimed invention except for each of the magnets has a circular cross-section.

Bitterly discloses magnets (74) has a circular cross-section.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the magnets Zigler et al. and utilize the circular magnets as taught by Bitterly et al. in order to prevent the magnets from dislocation.

7. Claims 11-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merritt et al. in view of Gentry et al.

Merritt et al. disclose an electric machine comprising:

A rotor (22); a stator (26) fixedly located within the rotor. But, Merritt et al. do not disclose a specific rotor structure having a magnet holder as claimed in claim 11.

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Gentry et al. disclose a rotor (10) having a first bore along a central axis of rotation thereof, the first bore defining an inner surface (24a) of the rotor;
a plurality of elongate magnets (24) located within the first bore adjacent to the inner surface and arranged around the axis of rotation;
a magnet holder (12) for securing the magnets to the rotor, the magnet holder being a separate piece from the rotor and having a second bore (radically inner surface of the 12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the rotor as taught Merrit et al. to accommodate with the magnetic holder of Gentry et al. in order to improve the strength of the rotor structure.

Regarding claim 12, Gentry et al. disclose the rotor is a composite structure.

Regarding claim 13, Gentry et al. disclose the plurality of magnets are located directly against the inner surface of the rotor.

Regarding claim 14, Gentry et al. disclose the inner surface of the rotor includes a substantially flat facet for each of the plurality of magnets.

Regarding claim 15, Gentry et al. disclose the inner surface of the rotor has a predetermined radius and wherein the plurality of magnets each has a

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generally square cross-section with one side having a convex radius matching the predetermined radius.

Regarding claim 16, Merritt et al. disclose the plurality of magnets includes a first set having a predetermined number of magnets equally spaced around the axis of rotation, and a second set having the same predetermined number of magnets, each of the magnets of the second set being axially aligned with a corresponding magnet in the first set.

Regarding claim 17, all of the magnets are rare earth magnets (well known).

Regarding claim 18, Gentry et al. disclose the magnet holder includes a retainer generally surrounding each of the magnets, and a separate liner located between the magnets and the inner surface of the rotor.

Regarding claim 19, Gentry et al. disclose the magnets each have two ends and an alignment feature provided on at least one the ends to locate the magnet in a predetermined orientation with respect to the holder.

Regarding claim 20, Gentry et al. disclose the alignment feature comprises a stepped portion (16 fig. 4).

Regarding claim 21, Gentry et al. disclose the alignment feature comprises a groove.

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Regarding claim 22, Gentry et al. disclose each of the magnets is symmetrical about its longitudinal axis.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Merritt et al. in view of gentry et al. as applied to claim 11 above, and further in view of Bitterly et al.

Merritt et al. and Gentry et al. disclose every aspect of claimed invention except for each of the magnets has a circular cross-section.

Bitterly discloses magnets (74) has a circular cross-section.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the combination motor structure of Merritt et al. and Gentry et al. and utilize the circular magnets as taught by Bitterly et al. in order to prevent the magnets from dislocation.

Regarding claim 24, Merritt et al. disclose each of the magnets has a square cross-section.

Regarding claims 25-26, the method claimed language is counter part of the apparatus claimed language. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to develop a particular method for the disclosed apparatus of Merritt et al. in view of Gentry et al.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Lam whose telephone number is (703) 308-7626. The fax phone number for this Group is (703) 305-3431.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0656.



Thanh Lam

Aug. 11, 2001



BURTON S. MULLINS
PRIMARY EXAMINER